Proposed Capital Improvement Plan (CIP)

FY 2025 – FY 2034

Submission of a 10-Year Plan for Utilities

ARLINGTON
VIRGINIA

Utilities Overview

Guiding Principles

- System resiliency & redundancy
- Reinvestment in infrastructure

Guiding Plans and Commitments

- Water Distribution System Master Plan (2014)
- Water Supply Resiliency Report (2023)
- Sanitary Sewer Collection System Plan (2024)
- Water Pollution Control Plant Solids Master Plan (2018)
- Investments at Washington Aqueduct & DC Water's Blue Plains Advanced Wastewater Treatment Plant

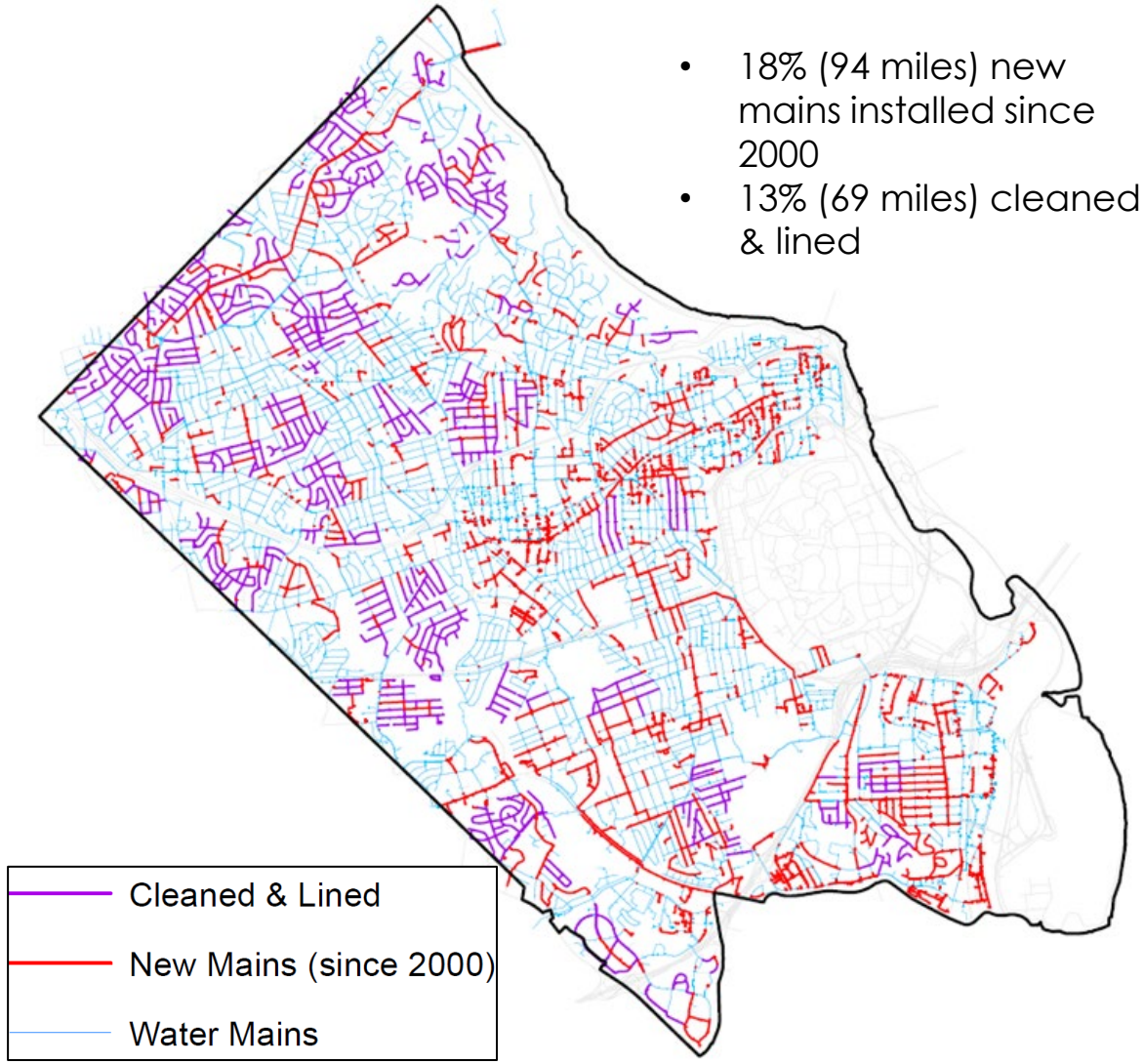
Asset Goals for System Renewal

Water Distribution

525 mi
of water mains

Target:

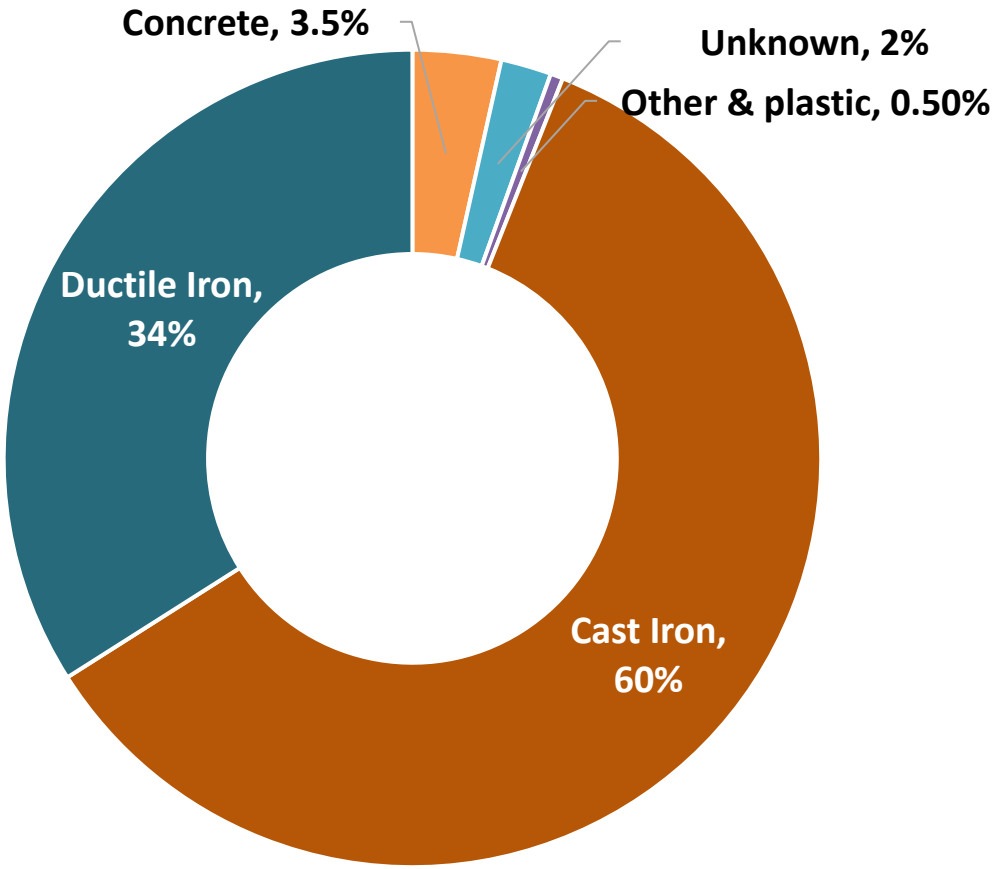
- **Annually replace 1.5-2.0% of non-transmission distribution system**



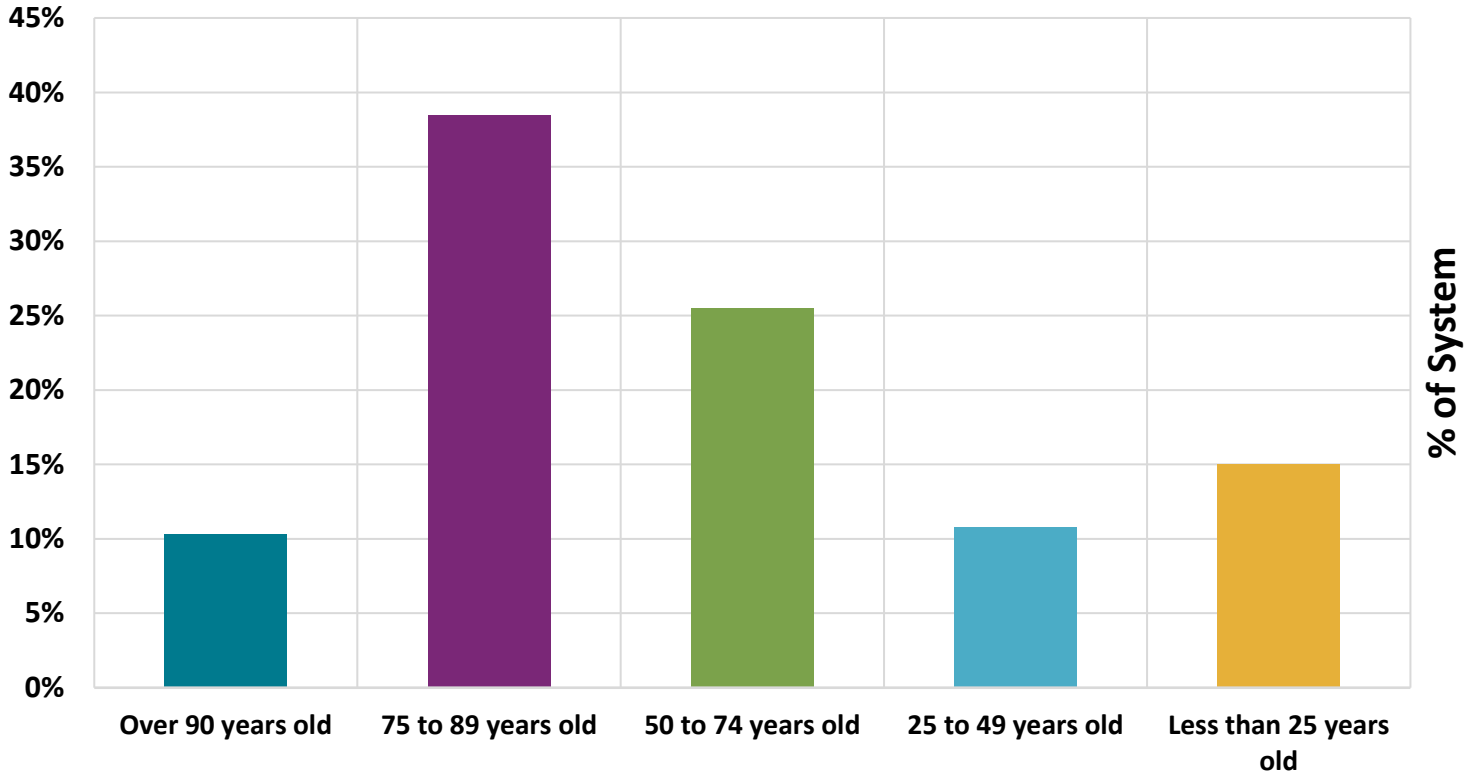
- 18% (94 miles) new mains installed since 2000
- 13% (69 miles) cleaned & lined

Water Assets by Age

Water Mains by Material



Small Diameter (< 12") Water Main Age



**Targeted replacement schedule of 1.6% of the small diameter system per year*

Nearly half of the distribution system is 75+ years old

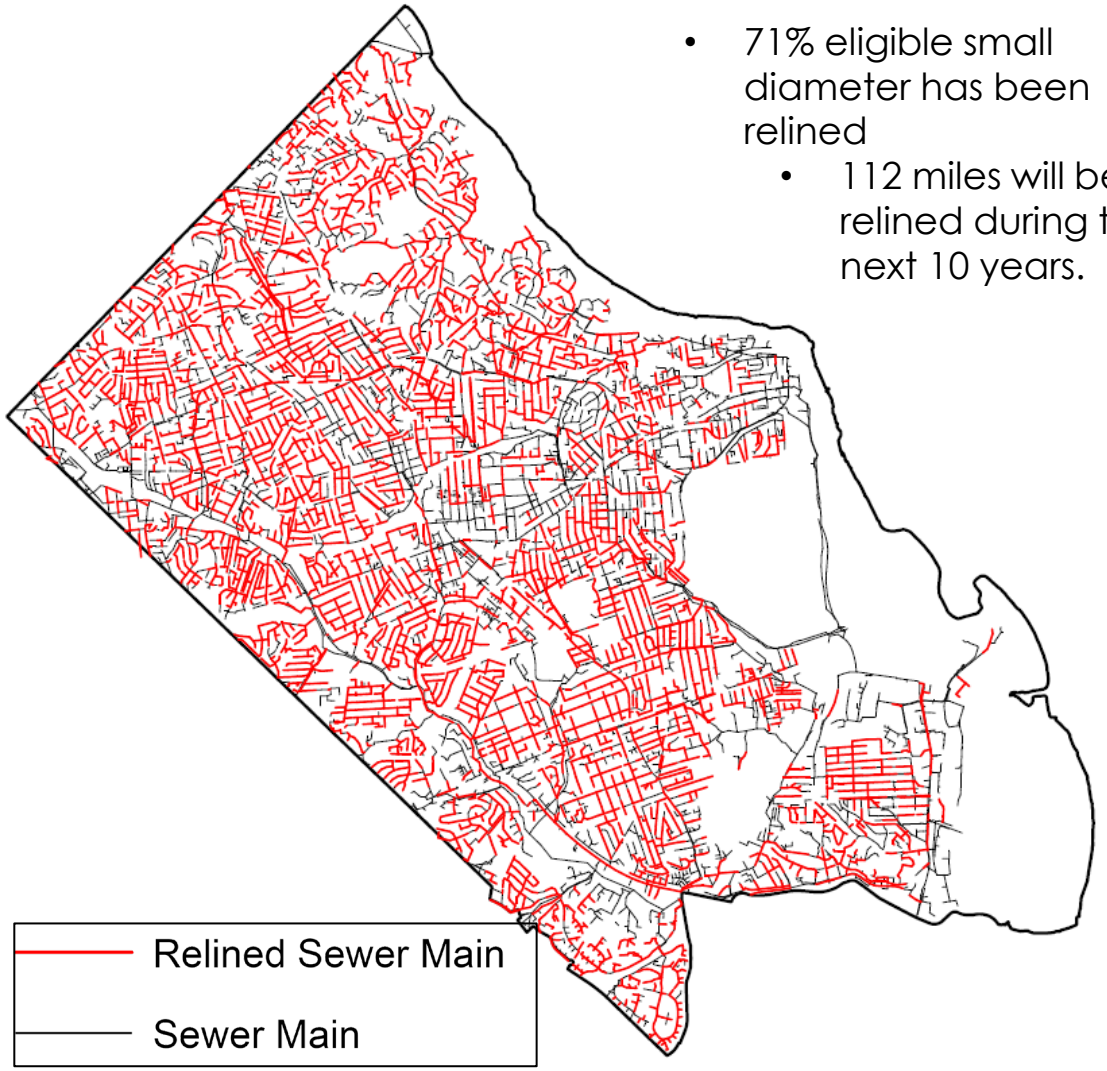
Asset Goals for System Renewal

Sanitary Sewer System

459 mi
of sanitary sewer

Target:

- **All programs combined target 3% reline / rehab system annually**



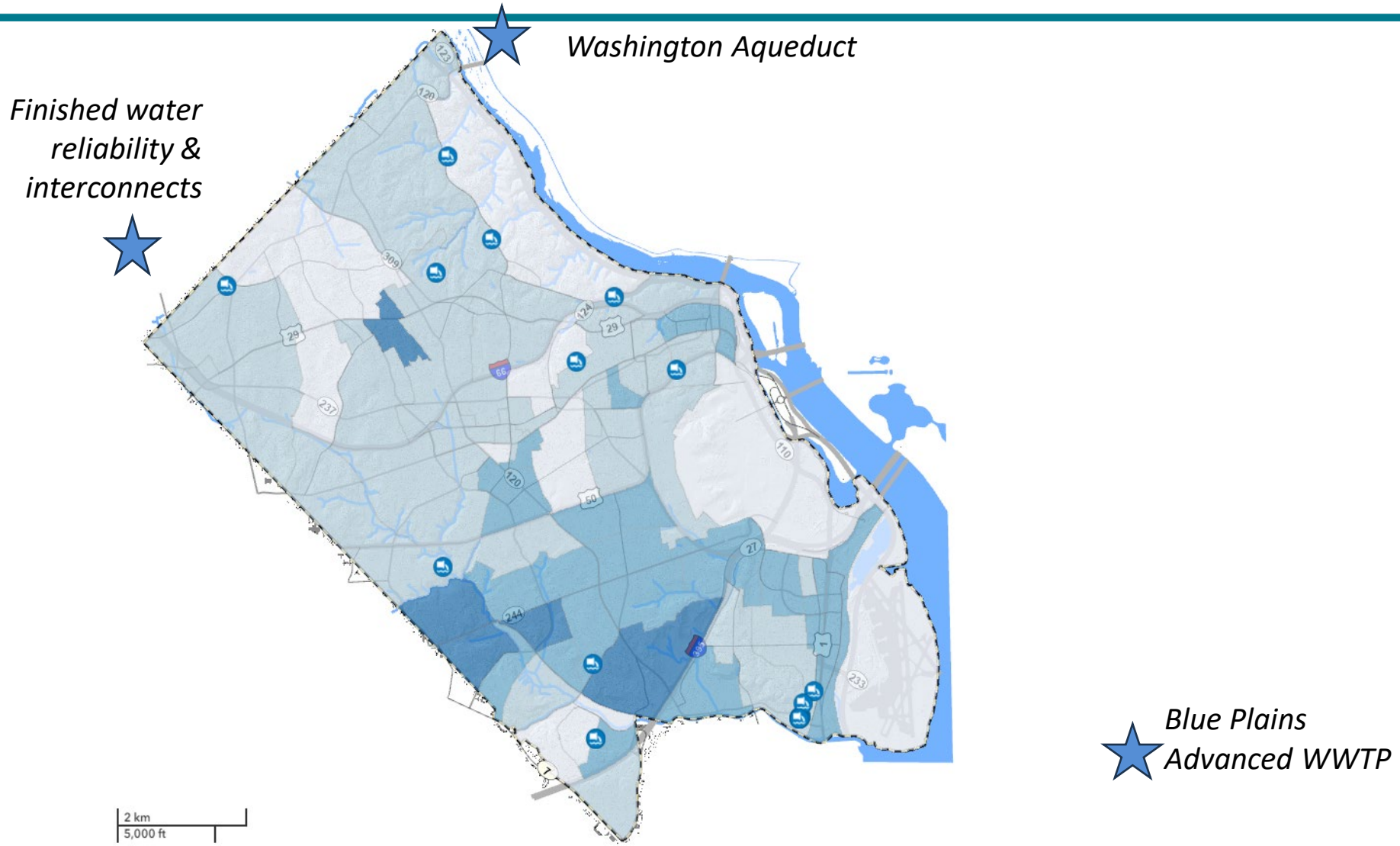
- 71% eligible small diameter has been relined
  - 112 miles will be relined during the next 10 years.

Distribution of CIP Investments

Projects are guided by system plans:

- Maintaining and upgrading system assets across the County to ensure operability and resilience of the water systems, sanitary sewer collection and treatment systems.

- Important for public health for citizens and businesses.



Completed Project Highlights

12” water main under N. Rhodes/ Queen St Bridge over Route 50 in Fort Myer Heights

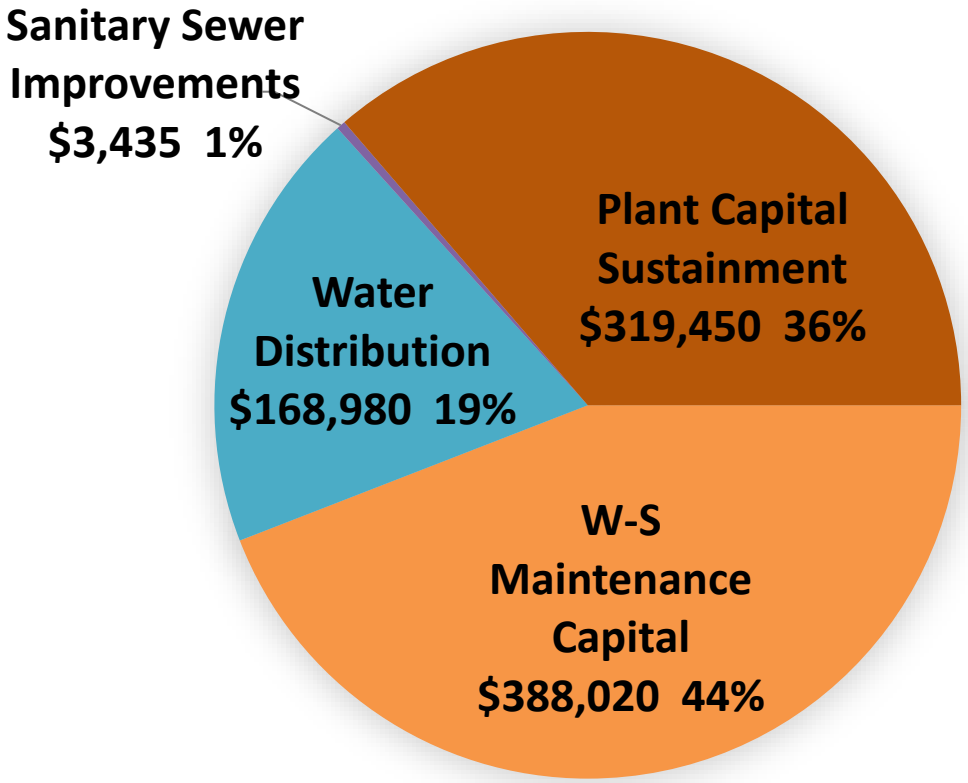
33" Spout Run Deep Sewer Relining and Rehabilitation

Preliminary Treatment Building Bar Screens/Odor Control Upgrades

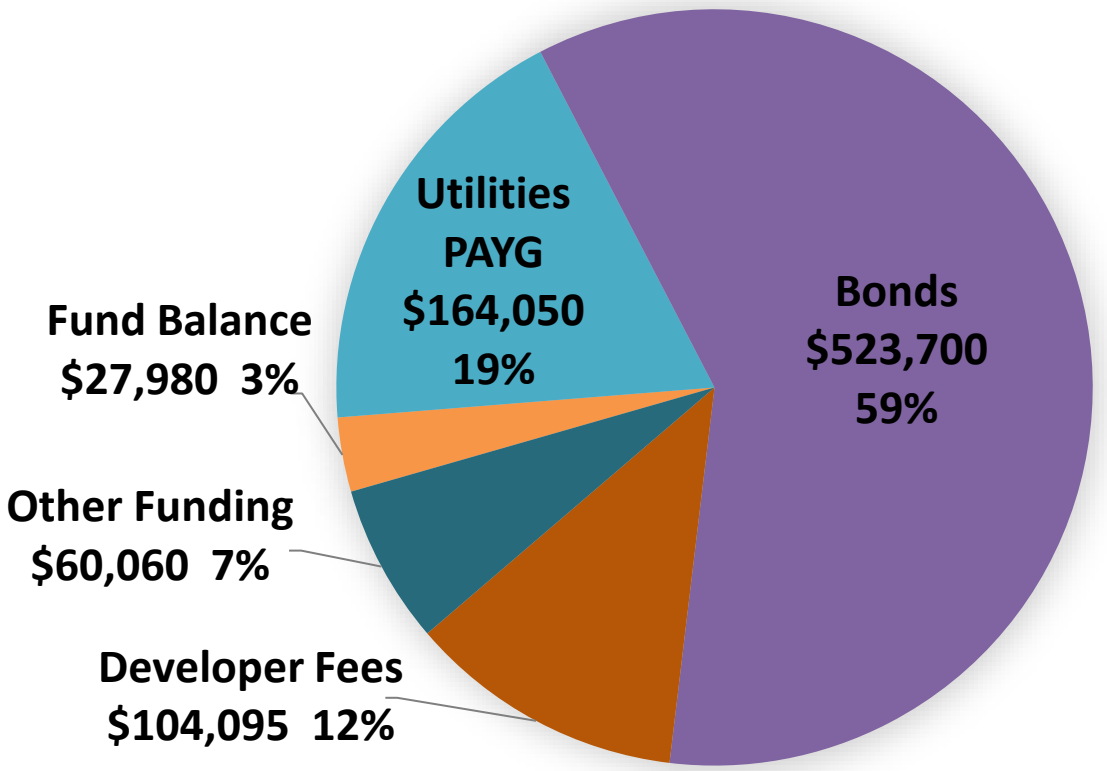
Utilities CIP Programs & Funding Sources ($000s)

$880M over 10 years

Program Totals



Funding Sources



FY 2025-2034 CIP – W-S Maintenance Capital

Water Main Replacements Program

Total budget: $78.8M
Comp Plan or Strategic initiative:
Water Distribution Master Plan

Community benefits:
- Service reliability
- Non-revenue water loss reduction
- Improved water quality

Related Projects:
- Water Main Cleaning & Lining

Washington Aqueduct Capital

Total budget: $145.8M
Comp Plan or Strategic initiative:
Water Resiliency and Redundancy

Community benefits:
- Public health necessity to provide clean drinking water.

Related Projects:
- Finished Water Reliability & Interconnections
- Regional Source Water Resiliency

Sewer Manhole Rehabilitation

Total budget: $11.2M
Comp Plan or Strategic initiative:
Sanitary Sewer Collection System Plan

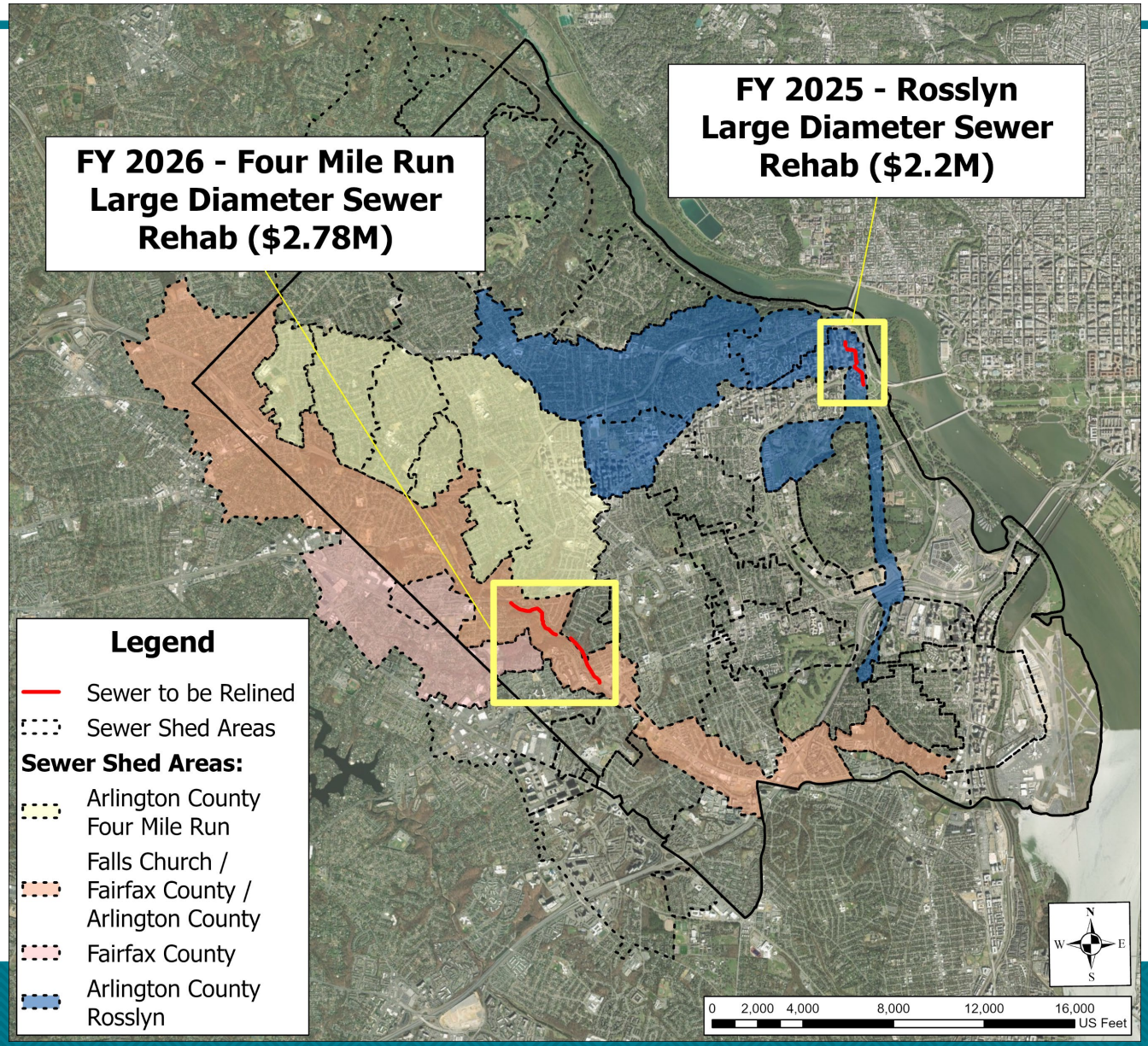
Community benefits:
- Reduction of inflow & infiltration
- Restore structural integrity
- Extend service life by 50 years

Related Projects:
- Sewer - Infiltration/Inflow
- Large Diameter Sewer Rehabilitation

Sewer - Large Diameter Main Rehabilitation

Federal Grants Projects for Large Diameter Sewer

Comprehensive Plan Goal: Maintenance of sewage collection system



Technology Enhancements: Advanced Metering Infrastructure (AMI) Pilot

Multi-year program to transition the County from Automated Meter Reading to AMI

Total budget: $12.9M

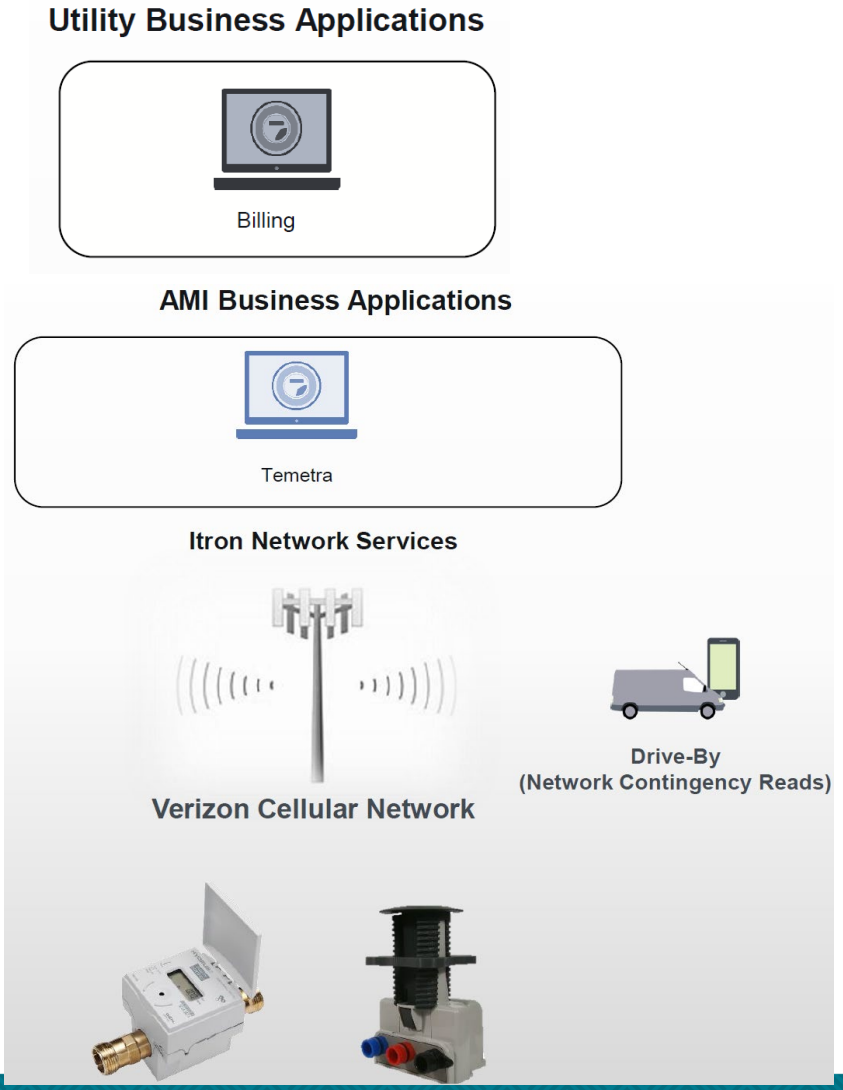
FY24 – FY26 Pilot Program

- Initially pilot 100 commercial and residential accounts
- If successful, move to transitioning ~3,400 commercial and multi-family accounts (comprises 75% of County's water consumption)

Transition Residential over 4 years: FY28 – FY31

Benefits

- Real-time monitoring and reporting of water usage
- Ability to proactively detect leaks
- Water loss reduction
- Reduced carbon footprint by reducing vehicle miles traveled (VMT)



FY 2025-2034 CIP – W-S Maintenance Capital

WATER & SEWER		
Project Name	**Total 10-Year Budget ($000s)**	**Project Description**
Water-Main Cleaning and Lining Program	17,850	Rehabilitates small diameter (8-inch and below) pre-1960s cast iron water mains to restore flow capacity and improve water quality. In conjunction with the water main replacement program, this project will improve the overall condition of the County's water main assets.
Water-Large Diameter Main & Valve Rehabilitation	11,155	Rehabilitates large diameter (20-36-inch) water mains that are over 50 years old, as well as the rehabilitation or replacement of 16-inch or larger valves and pressure regulating valves.
Water-Tank Rehabilitation	3,705	Water tanks are inspected every five years. Painting and other maintenance work are programmed accordingly based on results.
Water-Small Diameter Valve Rehabilitation & Replacements	3,335	Rehabilitates and/or replaces small diameter water valves throughout the County, as identified through the Valve Inspection and Exercise Program.
Water-Large Meter Vault Rehabilitation & Replacements	2,230	Ensures that large commercial meters, responsible for about 75% of the system's revenue, are kept in good working condition. Large meter vault inspections and condition assessments are being conducted in conjunction with the large meter replacements to identify vaults requiring rehabilitation or replacement.
Water-Pump Station Rehabilitation	565	Maintenance capital and rehabilitation of various water pump stations throughout the County to keep the equipment and facilities properly functioning.

FY 2025-2034 CIP – W-S Maintenance Capital

WATER & SEWER		
Project Name	**Total 10-Year Budget ($000s)**	**Project Description**
Sewer-Main Replacement Program	31,950	Replaces smaller diameter sewer mains when lining sewer mains is not viable or recommended.
Sewer-Infiltration & Inflow	27,500	Rehabilitates the small diameter (less than 15-inch) sanitary sewer system to eliminate infiltration and inflow, the intrusion of rain, ground, or surface water into the County's sanitary sewer system.
Sewer-Force Mains	3,615	Rehabilitates and/or replaces the County's force main systems, which are necessary to convey sewage for much of the northern third of the County, which are at a lower elevation than the rest of the County.
Trades Center Equipment & Improvements	1,035	Funding is related to relocating staff at the Trades Center from trailers that are beyond their useful life to permanent facilities.
Water Sewer Frames & Covers	11,155	Involves adjusting the elevation of water valve or manhole frames, either by raising or lowering, to align with the adjacent grade, pavement, curb, etc. in conjunction with the annual street paving program.

W-S Maintenance Capital Summary: $388M

	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	10 Year Total
1. Sewer-Infiltration & Inflow	$3,000	$3,105	$3,210	$3,315	$3,315	$3,420	$3,420	$3,525	$585	$605	$27,500
2. Sewer-Large Diameter Main Rehabilitation	2,780	2,185	4,140	2,550	3,090	2,340	100	4,220	1,040	2,050	24,495
3. Water-Large Diameter Main & Valve Rehabilitation	1,000	1,035	1,070	1,105	1,105	1,140	1,140	1,175	1,175	1,210	11,155
4. Water-Large Meter Vault Rehabilitation & Replacements	200	205	215	220	220	230	230	235	235	240	2,230
5. Manhole Rehabilitation	1,000	1,035	1,070	1,105	1,105	1,140	1,140	1,175	1,175	1,210	11,155
6. Water-Pump Station Rehabilitation	-	105	-	110	-	115	-	115	-	120	565
7. Sewer-Force Mains	2,100	155	160	165	165	170	170	175	175	180	3,615
8. Sewer-Main Replacement Program	2,000	2,590	3,210	3,315	3,315	3,420	3,420	3,525	3,525	3,630	31,950
9. Water-Small Diameter Valve Rehabilitation & Replacements	300	310	320	330	330	340	340	350	350	365	3,335
10. Technology Enhancements	725	1,365	60	2,630	2,735	2,935	3,050	65	65	65	13,695
11. Trades Center Equipment & Improvements	-	1,035	-	-	-	-	-	-	-	-	1,035
12. Washington Aqueduct Capital	7,800	8,075	8,345	8,620	8,620	8,890	8,890	67,915	9,165	9,440	145,760
13. Water-Main Cleaning and Lining Program	1,600	1,655	1,710	1,770	1,770	1,825	1,825	1,880	1,880	1,935	17,850
14. Water-Main Replacement Program	7,000	6,725	6,955	7,180	7,735	7,980	8,550	8,810	8,810	9,075	78,820
15. Water/Sewer Frames/Covers	1,000	1,035	1,070	1,105	1,105	1,140	1,140	1,175	1,175	1,210	11,155
16. Water-Tank Rehabilitation	100	-	105	2,320	830	115	-	115	-	120	3,705
Total Proposed	**$30,605**	**$30,615**	**$31,640**	**$35,840**	**$35,440**	**$35,200**	**$33,415**	**$94,455**	**$29,355**	**$31,455**	**$388,020**

FY 2025-2034 CIP – Water Distribution

Water Pump Station Improvements

Total budget: $3.8M
Comp Plan or Strategic initiative:
Water Resiliency and Redundancy

Community benefits:
- Redundancy
- Reliability during power outages

Related Projects:
- Lee PS MCC & Generator
- Ethan Allen Generator
- Minor Hill Generator

RENAMED

Finished Water Reliability & Interconnections

Total budget: $94.8M
Comp Plan or Strategic initiative:
Water Supply Resiliency Report

Community benefits:
- Resiliency and redundancy
- Ensures availability of drinking water during emergencies
- FY23-FY27 Planning & Design
- FY28-FY31 Construction

- *Formerly called "Source Water Reliability & Interconnections"*

RENAMED

Regional Source Water Resiliency

Total budget: $60.5M
Comp Plan or Strategic initiative:
Potomac Secondary Source Feasibility Study

Community benefits:
- Regional effort for off-river storage, including federal funding
- Mitigates severe water shortages due to environmental impacts and/or source contamination
- Placeholder funding in FY34

- *Formerly called "New River Crossing"*

FY 2025-2034 CIP – Water Distribution Projects

WATER & SEWER		
Project Name	**Total 10-Year Budget ($000s)**	**Project Description**
Water-Improvements for Development	5,570	This program addresses opportunities to enhance the water distribution system in conjunction with nearby developments, focusing on improving water quality, redundancy, and transmission capacity. Projects include water main looping, work to abandon existing mains and the completion of loops in prior developments.
Transmission Mains Resiliency *RENAMED*	4,205	This program provides redundant water mains to back up existing transmission capacity.

Water Distribution Summary: $169M

	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	10 Year Total
1. Finished Water Reliability & Interconnections RENAMED	$500	$2,070	$2,140	$11,050	$22,100	$22,800	$34,200	-	-	-	$94,860
2. Water-Improvements for Development	500	520	535	550	550	570	570	585	585	605	5,570
3. Water-Pump Station Improvements	2,250	110	265	830	-	125	-	130	-	135	3,845
4. Regional Source Water Resiliency RENAMED	-	-	-	-	-	-	-	-	-	60,500	60,500
5. Transmission Mains Resiliency RENAMED	150	310	3,745	-	-	-	-	-	-	-	4,205
Total Proposed	**$3,400**	**$3,010**	**$6,685**	**$12,430**	**$22,650**	**$23,495**	**$34,770**	**$715**	**$585**	**$61,240**	**$168,980**

Sanitary Sewer Improvements Summary: $3.4M

Sewer - Improvements for Development Program

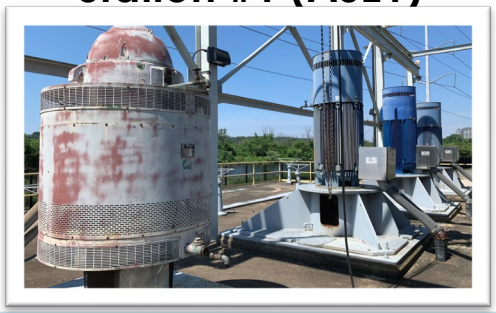
- Provides funding for small segments of new sewer main installation and other work directly associated with development.
- Provides for extension of sewer improvements along the remainder of a block where the developer is only responsible for work immediately on the frontage of the site.
- FY 2025 includes funding for new sewer main on North Lexington Street from 9th Street North to Wilson Boulevard.

($000s)	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	10 Year Total
Improvements for Development	$900	$260	$265	$275	$275	$285	$285	$295	$295	$300	$3,435

FY 2025-2034 CIP – WPCP Capital Sustainment

NEW

Activated Sludge Effluent Pump Station #1 (ASE1)



Total budget: $11.7M

Community benefits:

- More efficient pumping infrastructure to handle a wide range of flows at the WPCP
- FY25 Condition Assessment
- FY26 Design
- FY27-FY29 Construction

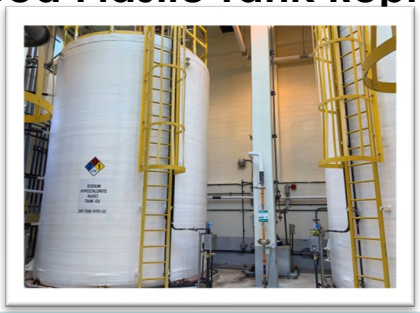
Asset Management System Replacement

Total budget: $2.3M

Community benefits:

- Current software dates to 1990s and does not have modern functionality
- New software will help more proactively maintain the WPCP's assets in a state of good repair
- FY24-FY26 Implementation

Maintenance Capital – Fiberglass Reinforced Plastic Tank Replacement



Total budget: $3.3M

Community benefits:

- Replaces five failing chemical storage tanks
- Increased efficiency of chemical usage for wastewater treatment
- Additional tank replacements are planned for future years

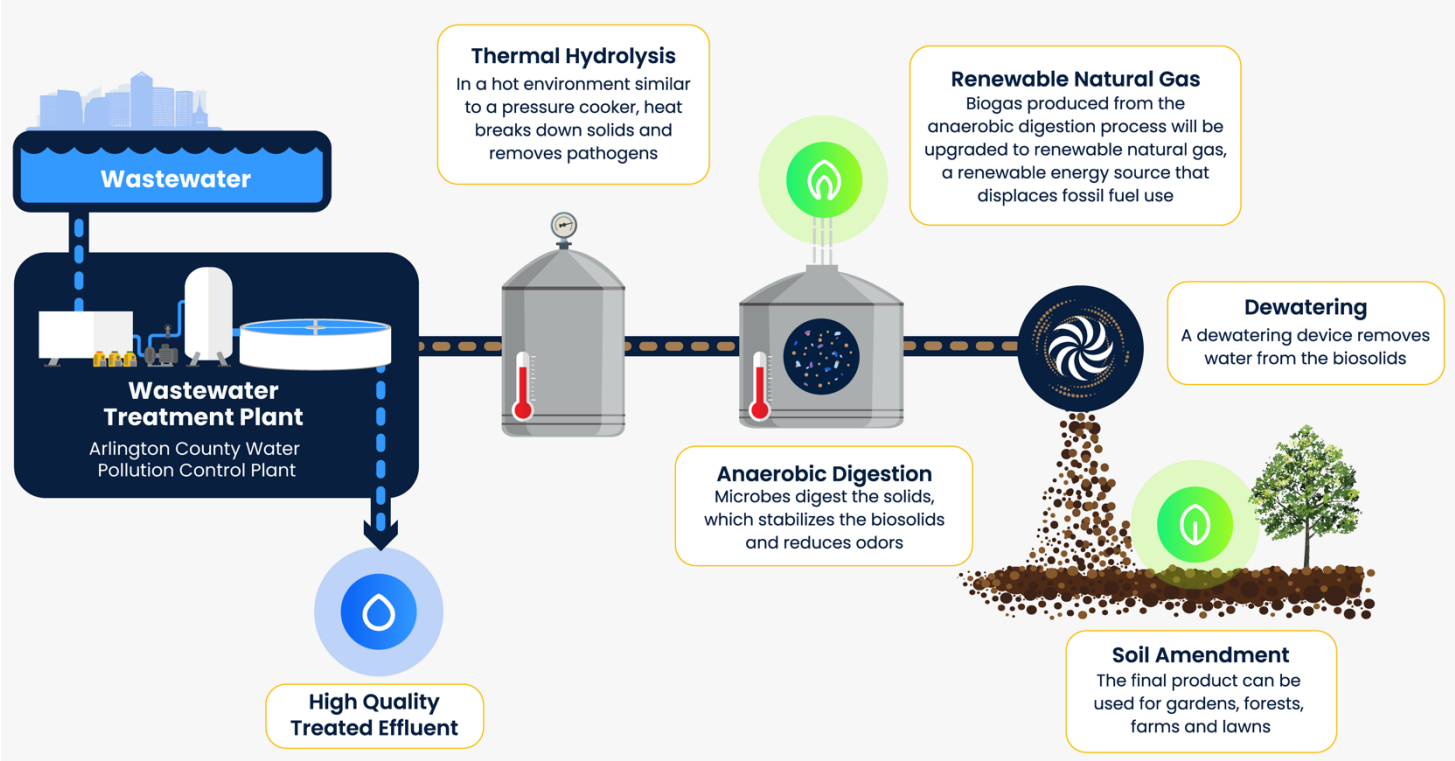
Re-Gen: Phases 2 & 3

ARLINGTON RE-GEN

Total budget: $226.0M
Estimated Completion: End of CY 2029

Comp Plan or Strategic Initiative: Solids Master Plan

- Significant investment and long-term sustainability in the Plant handling processes
- Addresses potential future regulatory changes while reducing community impacts
- Contract with Design-Build team executed in early 2024.
  - Full design begins Summer 2024
  - Guaranteed Maximum Price (GMP) approval for construction expected to be presented to the Board in late 2025
- External stakeholder engagement to inform the community and gather feedback



Sustainability & Community Benefits

ARLINGTON RE-GEN

Fewer greenhouse gas emissions
4,290 metric tons per year reduced

Energy positive
35% more energy produced than consumed

Less chemical usage
Lime deliveries eliminated

Less truck traffic
Biosolids hauling cut in half

Less fossil fuel
Offsets 81,000 MMBtu per year

More resilient infrastructure

Re-Gen Supports 4 of the 6 Arlington Community Energy Plan Goals:

Increase energy & operational efficiency of all buildings	✓
Increase local energy supply and distribution efficiency in Arlington using District Energy	
Increase locally generated energy supply through use of renewable energy options	✓
Refine and expand transportation infrastructure and operations enhancements	✓
Integrate CEP goals into all County activities	✓
Advocate and support personal action through behavior change and effective education	

Stakeholder Tour 2022

Outreach at Rock-N-Recycle 2023

FY 2025-2034 CIP WPCP Capital Sustainment

WATER & SEWER		
Project Name	**Total 10-Year Budget ($000s)**	**Project Description**
WPCP Maintenance Capital	22,310	Funding covers a wide variety of one-to-one capital replacements and capital maintenance associated with the Water Pollution Control Plant's assets, including items such as HVAC overhauls, major equipment rehabilitation or replacements, and capital repairs to process structures such as tanks or pipes. Includes Improvements to Eads St Property
Blue Plains Capital Improvements	19,155	DC Water's Blue Plains Advanced Wastewater Treatment Plant processes a portion of Arlington County's sewage after transmission through Fairfax County mains.
Secondary Clarifiers	18,210	Rehabilitation and/or replacement of three secondary clarifiers will restore the tanks to full working condition.
WPCP Technology Enhancements	10,120	This program includes a comprehensive suite of projects to address needed upgrades to the WPCP's Process Control System (PCS) and associated technology infrastructure.
USACE Coastal Storm Resiliency NEW	5,900	The project will study a potential floodwall that would be constructed along the northern bank of Four Mile Run between the Four Mile Run bike trail and the WPCP.
Grit System Upgrades NEW	2,705	This project will evaluate and rehabilitate/ improve the grit collection and disposal system in the Preliminary Treatment Building to improve removal of the abrasive material and protect downstream equipment. Formerly called Primary Clarifier Upgrades
Odor Control	1,100	Due to the location of the WPCP, it is necessary to tightly control and limit odors by collecting and treating odorous air.

WPCP Capital Sustainment Summary: $319.5M

($000s)	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	10 Year Total
1. Activated Sludge Effluent Pump Station #1 NEW	$800	$1,550	$2,675	$4,970	$1,655	-	-	-	-	-	$11,650
2. Asset Management System Replacement	1,000	1,035	265	-	-	-	-	-	-	-	2,300
3. Blue Plains Capital Improvements	1,210	1,705	1,825	2,775	3,010	2,605	2,130	1,455	885	1,555	19,155
4. Grit System Upgrades NEW	300	595	1,175	635	-	-	-	-	-	-	2,705
5. Improvements to Eads St Property	-	10	-	10	-	10	-	10	-	10	50
6. Odor Control	-	-	-	550	550	-	-	-	-	-	1,100
7. Re-Gen Phase II	10,600	4,865	-	-	-	-	-	-	-	-	15,465
8. Re-Gen Phase III	17,200	58,030	62,925	50,575	21,755	-	-	--	-	-	210,485
9. Secondary Clarifiers	-	-	-	-	-	-	1,140	5,170	7,755	4,145	18,210
10. USACE Coastal Storm Resiliency NEW	200	-	-	-	-	-	5,700	-	-	-	5,900
11. WPCP Maintenance Capital	2,000	2,070	2,140	2,210	2,210	2,280	2,280	2,350	2,350	2,420	22,310
12. WPCP Technology Enhancements	3,500	2,070	535	550	550	570	570	585	585	605	10,120
Total Proposed	**$36,810**	**$71,930**	**$71,540**	**$62,275**	**$29,730**	**$5,465**	**$11,820**	**$9,570**	**$11,575**	**$8,735**	**$319,450**

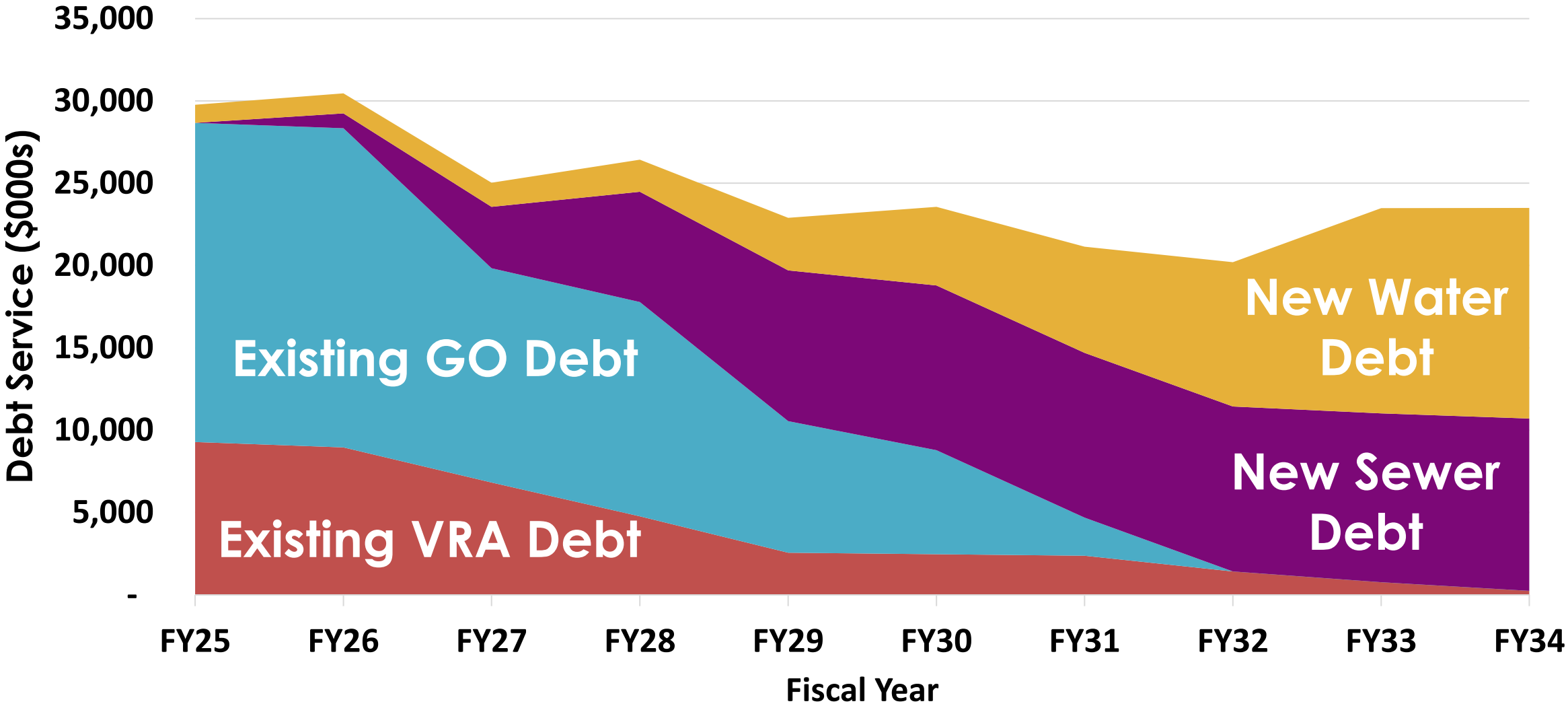
Utilities Program Summary: $703.9M

($000s)	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	10 Year Total
Water-Sewer Maintenance	**30,605**	**30,615**	**31,640**	**35,840**	**35,440**	**35,200**	**33,415**	**94,455**	**29,355**	**31,455**	**388,020**
Sanitary Sewer Improvements	**900**	**260**	**265**	**275**	**275**	**285**	**285**	**295**	**295**	**300**	**3,435**
Water Distribution	**3,400**	**3,010**	**6,685**	**12,430**	**22,650**	**23,495**	**34,770**	**715**	**585**	**61,240**	**168,980**
Water Pollution Control Plant	**36,810**	**71,930**	**71,540**	**62,275**	**29,730**	**5,465**	**11,820**	**9,570**	**11,575**	**8,735**	**319,450**
Sub-Total	**71,715**	**105,815**	**110,130**	**110,820**	**88,095**	**64,445**	**80,290**	**105,035**	**41,810**	**101,730**	**879,885**
Implementation Adjustment (20%)	(14,340)	(21,160)	(22,030)	(22,160)	(17,620)	(12,890)	(16,060)	(21,010)	(8,360)	(20,350)	(175,980)
Total Recommendation	**57,375**	**84,655**	**88,100**	**88,660**	**70,475**	**51,555**	**64,230**	**84,025**	**33,450**	**81,380**	**703,905**

Program Summary

($000s)	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	10 Year Total
New Funding											
Developer Contributions	7,900	9,385	9,665	10,270	10,265	10,875	10,875	11,420	11,415	12,025	104,095
PAYG	7,993	13,202	19,470	18,050	22,355	19,790	19,930	16,365	12,830	14,065	164,050
New Bond Issue	3,400	10,820	17,665	33,795	50,545	32,890	48,535	74,355	15,550	73,785	361,340
Other Funding	9,040	13,050	13,495	10,940	4,930	890	2,050	1,795	2,225	1,645	60,060
Subtotal New Funding	**28,333**	**46,457**	**60,295**	**73,055**	**88,095**	**64,445**	**81,390**	**103,935**	**42,020**	**101,520**	**689,545**
Previously Approved Funding											
Authorized but Unissued Bonds	23,640	52,205	52,225	34,290	-	-	-	-	-	-	**162,360**
Issued but Unspent Bonds	-	-	-	-	-	-	-	-	-	-	-
Other Previously Approved Funds	20,242	7,738	-	-	-	-	-	-	-	-	27,980
Subtotal Previously Approved Funding	**43,882**	**59,943**	**52,225**	**34,290**	**-**	**-**	**-**	**-**	**-**	**-**	**190,340**
Total Funding Sources	**72,215**	**106,400**	**112,520**	**107,345**	**88,095**	**64,445**	**81,390**	**103,935**	**42,020**	**101,520**	**879,885**
Implementation Adjustment (20%)	(14,340)	(21,160)	(22,030)	(22,160)	(17,620)	(12,890)	(16,060)	(21,010)	(8,360)	(20,350)	(175,980)
Total Recommendation	**57,875**	**85,240**	**90,490**	**85,185**	**70,475**	**51,555**	**65,330**	**82,925**	**33,660**	**81,170**	**$703,905**

Projected Utilities Fund Annual Debt Service



Utilities Rate 6-Year Forecast

	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
W-S Projected Rate Increase from prior year*	4.8%	~5.5%	2-4%	2-4%	2-4%	2-4%
Annual increase to average homeowner using 48 Thousand Gallons (TG)	$38	~$45	$20-40	$20-40	$20-40	$20-40

** Rates are annually adopted by the County Board during the operating budget process. These are notional projections based on current economic conditions. Rate drivers include water consumption/ sales, personnel costs, chemicals, electricity, direct/ indirect/ overhead service charges, infrastructure investments, and alignment with financial policies.*

Bond Referenda ($000s)

Funding Source	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	Total
Nov 2022 Approved Referendum*	$13,850	24,788	50,439	48,812	37,989	1,482	177,360
Nov 2024 Referendum (Proposed)**	---	3,400	10,820				14,220
Total Planned Debt* **	13,850	**28,188**	**61,259**	**48,812**	**37,898**	**1,482**	**$191,580**

** Aligns uses according to November 2022 bond referenda ($149.5M Re-Gen, $17.9M water (including Aqueduct))*
*** Dependent upon Aqueduct federal borrowing authority implementation & timing. Unknown if will be available starting in FY 2025.*
**** Excludes Implementation adjustment*

2024 Utilities Bond Referendum ($000s)

Utilities CIP Category	Projects/ Programs	Amount
W-S Maintenance Capital	Washington Aqueduct, Water Main Replacements	$12,430
Water Distribution	Finished Water Reliability & Improvements	505
WPCP Capital Sustainment	Activated Sludge Effluent Pump Station #1 (ASE1)	1,285

Total 2024 Proposed Bond Referendum = $14,220

Summary & Conclusion

Utilities' CIP requests align with Manager's priorities:

- Environmental & Resiliency goals
- Maintaining State of Good Repair (SGR)
- Regional Commitments
- Sustainable funding aligned with financial policies

Challenges:

- Regulatory changes
- Pricing and supply chain volatility
- Extended delivery times
- Schedule impacts due to skilled labor shortages
- Resources to add new assets, as well as maintain aging assets while operating current systems

Proposed Capital Improvement Plan (CIP)

FY 2025 – FY 2034

Submission of a 10-Year Plan for Utilities

ARLINGTON
VIRGINIA